12 Jul 1990

AN4AA-A

ANALYZER, LOGIC

1. GENERAL. This procurement requires a multichannel timing and state analyzer that can record and display logic signals and data from digital circuitry.

2. CLASSIFICATION. Type II, Class 5, Style E, and Color R in accordance with MIL-T-28800 for shipboard applications.

3. OPERATIONAL REQUIREMENTS. The equipment shall be capable of data and time domain recording of parallel digital signals as specified below. All specifications contained below shall be measured at the probe or lead tip used for connection to the unit under test.

3.1 Time domain. A timing format of at least 80 channels shall be recorded and displayed. Horizontal expansion capabilities shall be provided to display a portion of the total memory for more detailed examination. A positionable cursor that identifies recorded data words and time positions shall be provided. The triggering event shall be marked or annotated on the timing display. Operator assignment of the displayed channel order shall be provided.

3.1.1 Trigger channels. The analyzer shall have at least two trigger qualifier input channels.

3.1.2 Clock channels. The analyzer shall have an external clock input and a clock qualifier input channel.

3.2 Data domain. Displays of recorded data in binary, octal, and hexadecimal bases shall be provided.

3.2.1 Data channels. The analyzer shall have a minimum capability of receiving, recording, and displaying parallel data words of at least 16 bits.

3.3 Display. Minimum usable viewing area: 100 mm (4 in) high by 120 mm (5 in) wide.

3.4 Probe characteristics.

3.4.1 Input RC. 100 kilohms minimum shunted by 8 pF or less.

3.4.2 Threshold. The logic analyzer shall have preset thresholds for TTL and ECL logic. The equipment shall be provided with a variable threshold, adjustable in 0.1V increments from -10V to ±10V.

3.4.3 Maximum input. ±30 Vdc referenced to ground.

3.5 Glitch capture. The equipment shall detect and display glitches of 5 ns at the threshold level.

3.6 Internal clock. Selectable periods from 10 ns to 10 ms.

3.7 External clock. DC to 25 MHz with selectable positive and negative edge active modes. Minimum clock pulse width: 10 ns or less.

3.7.1 Setup and hold time. 10 ns or less.

3.8 Memory. 1 kilobit per channel.

3.9 Self-check. A self-check function that verifies operation of all basic functions shall be provided.

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4. GENERAL REQUIREMENTS.

4.1 Power source. MIL-T-28800 nominal power source requirements are invoked. Maximum power consumption: 400W.

4.2 Weight. 20 kg (44 lb) maximum.

4.3 Lithium batteries. Per MIL-T-28800, lithium batteries are prohibited without prior authorization. A request for approval for the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.